

## BARENTS SEA



# Salvage of submarine *Kursk* (K-141)

An explosion in the bow section of the Russian nuclear submarine *Kursk* on August 12, 2000, resulted in the loss of the vessel and all 118 crew. An international team led by Mammoet-SMIT recovered the wreck and delivered it to the Murmansk drydock in October 2001

### Giant 4 salvage barge

Length: 140m  
Capable of carrying 24,000 tonnes.  
Accommodation for 50 crew

**Strand jacks:** *Giant 4* is fitted with 26 strand jacks – each capable of lifting over 900 tonnes. Lifting is precisely controlled by computer system

**Heave compensators:** Reduce impact of sea swell. Force on each bundle of cables set individually to minimize tension on *Kursk's* hull

Section cut out to make room for *Kursk's* conning tower

Anchors

**Lifting cables:** Lowered from pontoon. Each "bundle" is made up of 54 steel cables or strands

**Cable plug:** Specially designed by Mammoet

**Holes:** Cut in hulls by divers using high-pressure water jets which blast abrasives

108 metres

***Kursk* (K-141)**  
Length: 155m  
Weight: 18,000 tonnes

Beams  
Inner hull  
Outer hull

Outer hull  
Beams  
Inner hull

**Bow section:** Salvage workers cut away submarine's mangled first compartment because of the risk of unexploded torpedoes. It is left on sea bed and raised later

**Divers:** Attach all 26 lifting cables and unfold arms under beams and inner hull to provide firm anchorage

**Saddles:** Four specially-designed saddles – mounted below pontoon – are bolted to hull of submarine

**Weapons:**  
Type 65-76A torpedoes,  
SS-N-19 Granit cruise missiles

Saddles absorb forces generated by wave motion

Submarine towed at about three knots